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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,109	09/09/2003	Joyce Rosenthal	899.069US1	9947
21186	7590	04/08/2005	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			ENSEY, BRIAN	
			ART UNIT	PAPER NUMBER
			2643	
DATE MAILED: 04/08/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/658,109

**Applicant(s)**

ROSENTHAL, JOYCE

**Examiner**

Brian Ensey

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42-47 is/are allowed.
- 6) ☒ Claim(s) 1-10, 21, 22 and 31-38 is/are rejected.
- 7) ☒ Claim(s) 11-20, 23-30 and 39-41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/19/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer et al U.S. Patent No. 6,175,635 in view of Schiess et al. U.S. Patent No. 5,265,168.

Regarding claim 1, Meyer discloses a hearing aid adapted to be worn in or about an ear, comprising: a hearing aid housing (25); a microphone (1) to receive sound and to generate an input signal based on the sound; a signal processing circuit (17) housed by the housing and receiving the input signal from the microphone, the signal processing circuit to process the input signal and produce an output signal based on a plurality of signal processing parameters; a receiver (20) in the housing to transmit sound based on the output signal; and manually actuatable control elements (10-15) accessible externally from the housing (See Fig. 1 and col. 4, lines 26-51). Meyer further teaches multiple parameters may be selected and adjusted by the externally mounted control elements. Meyer does not expressly disclose a single parameter-select device to select a parameter of the plurality of signal processing parameters to be adjusted; and a parameter-adjust device to adjust the parameter selected by the parameter-select device. However, Schiess teaches a parameter-select device to select a parameter of the plurality of parameters to be adjusted; and a parameter-adjust device to adjust the parameter selected by the

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parameter-select device (See Fig. 1 and col. 3, lines 26-56). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the parameter select and adjust devices of Schiess in the control elements of Meyer to further maximize the programming versatility of Meyer and further limit the number of control elements as taught by Meyer.

Regarding claim 2, Meyer further discloses wherein the housing is adapted to be worn behind an ear (See col. 4, lines 28 and 29).

Regarding claims 3 and 4, Meyer does not expressly disclose the housing is adapted to be positioned in a concha of an ear or in an auditory canal of an ear. However, Meyer teaches a hearing aid to be worn at the ear of the user (See col. 4, lines 26 and 27). Further, the placement of hearing aids in a concha of an ear or in an auditory canal of an ear is well known in the art and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide multiple mounting configurations to meet the preferences of the users.

Regarding claims 5 and 6, Meyer does not expressly the parameter-select device and parameter-adjust device comprises a potentiometer located about an external surface of the housing. However, Meyer teaches multiple parameters may be selected and adjusted by the externally mounted control elements. Further, Schiess teaches operating elements are well known to be potentiometers (See col. 1, lines 15 and 16). It would have been obvious to one of ordinary skill in the art at the time of the invention to use potentiometers for control elements since they are readily commercially available.

Regarding claim 7, Meyer does not expressly disclose the parameter-select device comprises a Resistance Technology Incorporated Trimmer Model 17 located about an external surface of the housing; and the parameter-adjust device comprises a Microtronic Volume Control

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Model DCU 93 located on an external surface of the housing. However, Meyer does not limit the type of parameter select or adjust device used. Further, Schiess teaches the use of multiple types of devices including potentiometers and trimmers (See col. 1, lines 15 and 16). It would have been obvious to one of ordinary skill in the art at the time of the invention to use any type of potentiometers or trimmers for control elements which are readily commercially available.

Regarding claim 8, Meyer further discloses the signal processing circuit comprises a digital signal processing circuit (See col. 3, lines 3-7).

Regarding claim 21, Meyer discloses a method of operating a hearing aid adapted to be worn in or about an ear, the method comprising: receiving sound in a microphone in a hearing aid housing and generating an input signal based on the sound; processing the input signal into an output signal in a signal processing circuit coupled to the microphone in the housing according to a plurality of parameters; generating sound from the output signal in a receiver coupled to the signal processing circuit in the housing; selecting one of the parameters with a manual control element on an external surface of the housing; and adjusting the selected parameter with a manual control element device on an external surface of the housing (See Fig. 1 and col. 4, lines 26-51). Meyer further teaches multiple parameters may be selected and adjusted by the externally mounted control elements. Meyer does not expressly disclose a single parameter-select device to select a parameter of the plurality of signal processing parameters to be adjusted; and a parameter-adjust device to adjust the parameter selected by the parameter-select device. However, Schiess teaches a parameter-select device to select a parameter of the plurality of parameters to be adjusted; and a parameter-adjust device to adjust the parameter selected by the parameter-select device (See Fig. 1 and col. 3, lines 26-56). It would have been

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obvious to one of ordinary skill in the art at the time of the invention to utilize the parameter select and adjust devices of Schiess in the control elements of Meyer to further maximize the programming versatility of Meyer and further limit the number of control elements as taught by Meyer.

Regarding claim 22, Meyer does not expressly disclose rotating a parameter-select potentiometer on an external surface of the housing to one of a plurality of positions. However, Meyer teaches multiple parameters may be selected and adjusted by the externally mounted control elements. Further, Schiess teaches operating elements are well known to be potentiometers (See col. 1, lines 15 and 16). It would have been obvious to one of ordinary skill in the art at the time of the invention to use potentiometers for control elements with multiple selectable positions since they are readily commercially available.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer in view of Schiess as applied to claim 1 above, and further in view of Martin U.S. Patent No. 6,130,950.

Regarding claim 9, Meyer discloses a hearing aid as claimed. Meyer further discloses a program connection (15) to receive instructions to be programmed into the signal processing circuit; a processor (22) (See Fig. 4 and col. 3, lines 3-21 and col. 6, lines 18-25). Meyer does not expressly disclose a memory device coupled to the processor; an interface coupled to the program connection, the processor, and the memory device to relay the instructions to the memory device and the processor; a first analog-to-digital converter coupled between the microphone and the processor to convert the input signal from the microphone into a digital signal to be received by the processor; and a digital-to-analog converter coupled between the

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processor and the receiver to convert a digital signal from the processor to the output signal to be received by the receiver. However, the use of A/D converters at the output of microphones and the input of speakers is well known in the art. Meyer teaches a DSP and EDP (See Fig. 4 and col. 3, lines 3-21 and col. 6, lines 18-25). It would have been obvious to one of ordinary skill in the art at the time of the invention that A/D converters are necessary to provide useful signals from the microphone and to the speaker. The use of memory devices are also well known in the art and Martin teaches a memory device coupled to the processor; an interface coupled to the program connection, the processor, and the memory device to relay the instructions to the memory device and the processor (See Fig. 1 and col. 3, line 58 to col. 4, line 65). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a memory for parameter storage.

Regarding claim 10, Meyer discloses a hearing aid as claimed. Meyer does not expressly disclose the signal processing circuit further comprises a second analog-to-digital converter coupled between the parameter-select device and the processor to convert an analog signal from the parameter-select device into a digital signal to be received by the processor to select one of the parameters. However, Martin teaches A/D converters between adjusting elements and the digital control (See Fig. 1). Further, since Meyer teaches a DSP, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide A/D conversion of all analog input to the signal processor.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer in view of Schiess as applied to claim 21 above, and further in view of Martin.

Regarding claim 31, Meyer discloses a method as claimed. 31. Meyer does not expressly disclose converting the input signal into a digital input signal in an analog-to-digital converter; processing the digital input signal into a digital output signal in a digital signal processing circuit according to the parameters; and converting the digital output signal into the output signal in a digital-to-analog converter. However, the use of A/D converters at the output of microphones and the input of speakers is well known in the art. Meyer teaches a DSP and EDP (See Fig. 4 and col. 3, lines 3-21 and col. 6, lines 18-25). It would have been obvious to one of ordinary skill in the art at the time of the invention that A/D converters are necessary to provide useful signals from the microphone and to the speaker.

Claims 32-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Svean et al. U.S. Patent No. 6,657,524.

Regarding claim 32, Svean discloses a hearing aid adapted to be worn in or about an ear, comprising: a hearing aid housing; a microphone (M1) to receive sound and to generate an input signal based on the sound; a receiver (SG) in the housing to transmit sound from the hearing aid based on an output signal; a first memory device (E10) in the housing to store first parameters; a second memory device (E8) in the housing to store second parameters; a manual control device on an external surface of the housing to select the first parameters to be changed; and a signal processing circuit (E3) coupled between the microphone, the receiver, the first memory device, and the second memory device in the housing to process the input signal from the microphone and the output signal to be transmitted to the receiver according to the first parameters or the second parameters (See Fig. 2 and col. 5, lines 9 to col. 6, line 40). Svean does not expressly disclose that the manual control device on the external surface of the housing selects specific



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parameters from a specific memory device. However, Svean teaches multiple memory devices coupled to a DSP and a manual interface to change parameters such as operational status and mode (See col. 7, lines 49-55). It is well known in the art to use ROM and EEPROM memory to maintain functional and operational parameters when a device is not powered. It would have been obvious to one of ordinary skill in the art at the time of the invention that the parameters to be changed by the manual control are stored in either one or both of ROM and EEPROM for use when the device is in use to prevent the loss of the parameter operational characteristics when the device is not in use.

Regarding claims 33-35, Svean further discloses a housing adapted to be worn in the auditory canal of the ear (See Fig.1). Svean does not expressly disclose a housing adapted to be worn behind an auricle of the ear or to be positioned in a concha of the ear. However, the placement of hearing aids in a concha of an ear or worn behind an auricle of the ear is well known in the art and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide multiple mounting configurations to meet the preferences of the users.

Regarding claim 36, Svean further discloses the first memory device comprises a first EEPROM (See Fig 2). Svean does not expressly disclose the second memory device comprises a second EEPROM. However, the use of EEPROM's as memory devices is well known in the art as illustrated by Svean. It would have been obvious to one of ordinary skill in the art at the time of the invention that multiple EEPROMs be used for an easily reprogram able memory configuration.

Regarding claim 37, Svean does not expressly disclose the memory select device comprises a pushbutton toggle switch located on an external surface of the housing to generate a

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pulse when pushed. However, Svean teaches a manual control signal may be applied by operating buttons, switches, etc. (See col. 7, lines 49-54). It would have been obvious to one of ordinary skill in the art at the time of the invention that the manual control device is a toggle switch used to generate a pulse when pushed for the control signal generated.

Regarding claim 38, Svean further discloses the signal processing circuit comprises a digital signal processing circuit (See Fig. 2).

### ***Allowable Subject Matter***

Claims 11-20, 23-30 and 39-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 42-47 are allowed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Mon-Fri: 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 571-272-7499. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

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**Or faxed to:**

(703) 872-9306, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand-delivered responses should be brought to: Customer Service Window, Randolph Building, 401 Dulany Street, Arlington, VA 22314

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BKE  
March 29, 2005

  
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